

REMARKS

Claims 1 and 14 have been amended and 30-35 and 70-72 have been canceled. Claims 1-30 and 36-69 are pending in the present application. Applicant reserves the right to pursue the original claims and other claims in this application and in other applications.

Claims 1-44, 50-59 and 65-72 stand rejected under 35 U.S.C. § 102 (e) as being anticipated by Brown et al., US Patent No. 6,172,895 (hereinafter "Brown"). The rejection is respectfully traversed and reconsideration is respectfully requested.

Claim 1 recites a method of routing a system bus to a plurality of expansion cards. The claim 1 method comprises the steps of "routing the bus into a first connector and into a first circuit card residing within the first connector" and "routing the bus from a portion of the first circuit card into a portion of a second circuit card residing within a second connector." According to claim 1, "the bus is routed from the first circuit card to the second circuit card without entering the second connector." Applicant respectfully submits that Brown does not disclose the claimed invention.

Brown, by contrast, discloses memory system 10 using standard memory modules (e.g., RIMM cards 24, 35) and a unique memory module (e.g., RIMM card 54) designed to provide built-in bus termination (see FIG. 3 of the Brown patent). The unique memory module includes its own termination, which according to Brown, is an improvement over the prior art that places termination on the mother board. In the Brown system 10, a RAMBUS channel 20 connects a RAMBUS ASIC Cell (RAC) 18 to a memory socket 22 that is "physically connected to mother board 12." Brown Col. 5, lines 53-55. The RAMBUS channel 20 connections are "made by printed wiring traces . . . on one or both surfaces of motherboard 12." Brown Col. 5, lines 55-57.

According to the Brown patent, the:

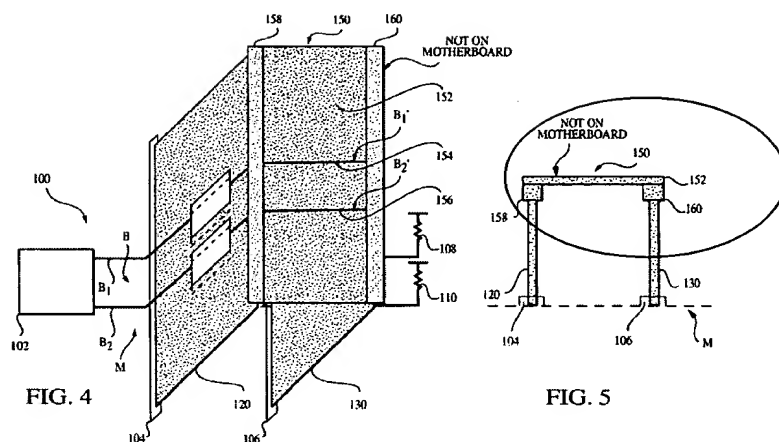
RAMBUS channel 20 enters RIMM card 24 at a bus entry region 26 and is then connected to a number of individual memory devices 28 attached to RIMM card 24. The RAMBUS channel 20 then exits RIMM card 24, via a RAMBUS channel exit region 30 and passes out of the first RIMM card 24 and back to mother board 12. Additional printed wiring traces carry the RAMBUS channel 20 to a second socket 31 also on mother board 12. Second socket 31 holds second RIMM card 35. Similarly, the RAMBUS channel 20 exits the second conventional RIMM card and is connected to the last RIMM card 54, which also contains bus termination 52. Unlike the prior art, terminations 52 are mounted directly on card 54, thereby eliminating the need for an exit portion of RAMBUS channel 30 (FIG. 1).

Brown Col. 5, line 62 to Col. 6, line 5 (emphasis added).

Thus, although Brown uses a novel termination scheme, Brown does not disclose, teach or suggest the claimed invention for at least two reasons:

(1) the RAMBUS channel 20 is routed from the first socket 22 to the second socket 31, whereas the claimed invention recites "routing the bus from a portion of the first circuit card into a portion of a second circuit card" and (2) the RAMBUS channel 20 is routed to the second socket 31 along the motherboard 12, whereas the claimed invention recites that "the bus is routed from the first circuit card to the second circuit card without entering the second connector."

These differences between the claimed invention and the Brown system are reflected in circled portions of the figures on the next page. In the claimed invention, the circled portion is not on the mother board, whereas the circled portions in the Brown system are on the mother board.



FIGS. 4 and 5 (one embodiment of the claimed invention)

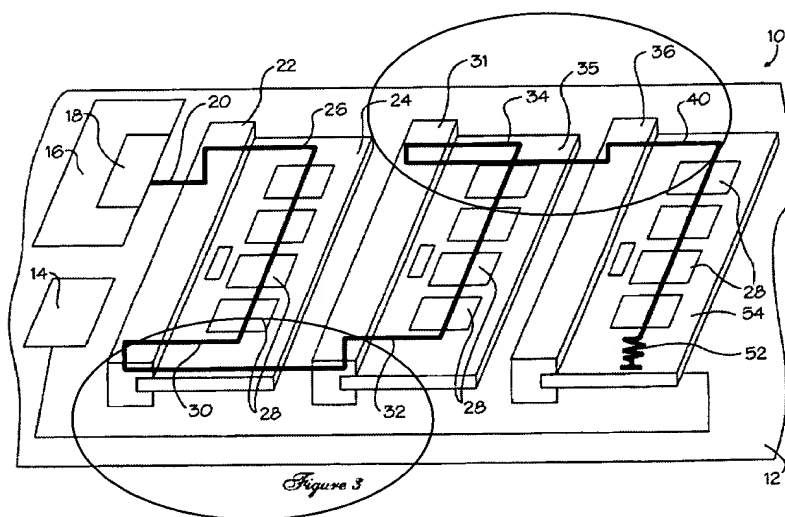
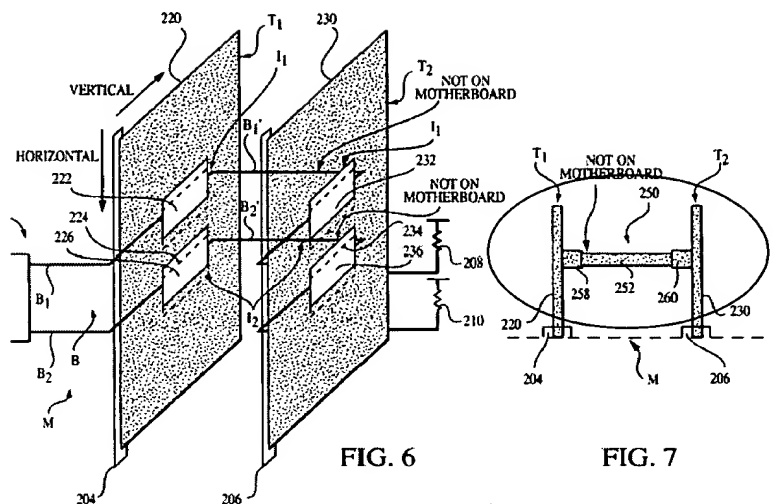


FIG. 3 of the Brown Patent

Another embodiment of the claimed invention is reproduced on the next page and is different from Brown for at least the reasons set forth above (i.e., the circled portion is not on the mother board).



FIGS. 6 and 7 (another embodiment of the claimed invention)

The Office Action also relies on a "prior art" system which Brown purportedly improves upon. The prior art system includes a RAMBUS channel 20 connected between the RAC 18 and the first memory socket 22. Socket 22 is physically connected to the mother board 12 and the RAMBUS channel 20 connections are made by internal printed wiring traces. According to the Brown patent, the RAMBUS channel 20 in the prior art system:

enters RIMM card 24 at a bus entry region 26 and is then connected to a number of individual memory devices 28 attached to RIMM card 24. The RAMBUS channel next exits RIMM card 24 via a RAMBUS channel exit region 30, and passes from first RIMM card 24 back to mother board 12. Additional printed wiring traces carry the RAMBUS channel 20 to a second socket 31 also on mother board 12. Second socket 31 holds a second RIMM card 35. . . . A RAMBUS channel entry portion 32, a series of memory devices 28 and a RAMBUS channel exit portion 34 make up second RIMM card 35. In a similar fashion, a third socket 36, third RIMM card 38, RAMBUS channel entry portion 40, and RAMBUS channel exit portion 42 make up the third RAMBUS memory

card.

Brown Col. 4, line 67 to Col. 5, line 14 (emphasis added)

Thus, the alleged prior art system disclosed in Brown does not disclose, teach or suggest the claimed invention for at least two reasons: (1) the RAMBUS channel 20 is routed from the first socket 22 to the second socket 31, whereas the claimed invention recites "routing the bus from a portion of the first circuit card into a portion of a second circuit card" and (2) the RAMBUS channel 20 is routed to the second socket 31 from the motherboard 12, whereas the claimed invention recites that "the bus is routed from the first circuit card to the second circuit card without entering the second connector."

For at least the foregoing reasons, claim 1 is allowable over Brown. Claims 1-13 depend from claim 1, and are allowable along with claim 1 for at least the reasons set forth above and on their own merits.

Claim 14 recites "routing the bus into a first circuit card residing within a first slot; routing the bus from a portion of the first circuit card into a portion of a second circuit card residing within a second slot, wherein the bus is routed from the first circuit card to the second circuit card without entering the second slot." As set forth above, Brown fails to disclose these limitations. As such, claim 14 is allowable over Brown. Claims 15-29 depend from claim 14, and are allowable along with claim 14 for at least the reasons set forth above and on their own merits.

Claim 36 recites "said bus is routed into a first connector, into a first circuit card residing within said first connector, out of a portion of said first circuit card into a portion of a second circuit card residing within a second connector and through said second circuit card, and wherein said bus is routed from said first circuit card to said second circuit card without entering said second connector." As such, claim 36 is

allowable over Brown for at least the reasons set forth above. Claims 37-44 and 50 depend from claim 36, and are allowable along with claim 36 for at least the reasons set forth above and on their own merits.

Claim 51 recites "said bus is routed into a first circuit card residing within a first slot, out of a portion of said first circuit card and into a portion of a second circuit card residing within a second slot and out of the second circuit card, wherein said bus is routed from said first circuit card to said second circuit card without entering said second slot." As such, claim 51 is allowable over Brown for at least the reasons set forth above. Claims 52-59 and 65 depend from claim 51, and are allowable along with claim 14 for at least the reasons set forth above and on their own merits.

Claim 66 recites "said bus is routed into a first connector, into a first circuit card residing within said first connector, out of a portion of said first circuit card into a portion of a second circuit card residing within a second connector, through said second circuit card and out of said second connector, wherein said bus is routed from said first circuit card into said second circuit card without entering said second connector." As such, claim 66 is allowable over Brown for at least the reasons set forth above.

Claim 67 recites "said bus is routed into a first circuit card residing within a first slot, out of a portion of said first circuit card and into a portion of a second circuit card residing within a second slot and out of the second circuit card, wherein said bus is routed from said first circuit card into said second circuit card without entering said second slot." As such, claim 67 is allowable over Brown for at least the reasons set forth above.

Claim 68 recites “wherein said bus is routed into a first memory circuit card residing within a first slot, out of a portion of said first memory circuit card and into a portion of a second memory circuit card residing within a second slot, and out of the second memory circuit card, wherein said bus is routed from said first memory circuit card into said second memory circuit card without entering said second slot.” As such, claim 68 is allowable over Brown for at least the reasons set forth above.

Claim 69 recites “an input bus connection for receiving signals from a system bus; an output bus connection for outputting signals to said bus; and a bus portion connecting said input bus connection to said output bus connection for routing bus signals through said card, wherein either said input bus connection does not connect to a connector in which said card resides or said output bus connection does not connect to a connector in which said card resides.” As such, claim 69 is allowable over Brown for at least the reasons set forth above.

Accordingly, the rejection should be withdrawn and claims 1-29, 36-44, 50-59 and 65-69 allowed.

Claims 45 and 60 stand rejected under 35 U.S.C. § 103(a) as being obvious over Brown in view of Cargin, Jr. et al., US. Patent. No. 6,023,147, (hereinafter “Cargin”). The rejection is respectfully traversed and reconsideration is respectfully requested.

Claim 45 depends from claim 36. As such, claim 45 recites “said bus is routed into a first connector, into a first circuit card residing within said first connector, out of a portion of said first circuit card into a portion of a second circuit card residing within a second connector and through said second circuit card, and wherein said bus is routed from said first circuit card to said second circuit card without entering said

second connector." Claim 60 depends from claim 51 and recites "said bus is routed into a first circuit card residing within a first slot, out of a portion of said first circuit card and into a portion of a second circuit card residing within a second slot and out of the second circuit card, wherein said bus is routed from said first circuit card to said second circuit card without entering said second slot."

As noted above, Brown fails to disclose, teach or suggest these limitations. Applicant respectfully submits that Cargin, which merely teaches a cable, fails to teach or suggest the limitations that are missing in Brown. As such, claims 45 and 60 are allowable over the cited combination for at least the reasons set forth above and on their own merits. The rejection should be withdrawn and the claims allowed.

Claims 46-49 and 61-64 stand rejected under 35 U.S.C. § 103(a) as being obvious over Brown in view of the Handbook of LAN Cable Testing (hereinafter the "Handbook"). The rejection is respectfully traversed and reconsideration is respectfully requested.

Claims 46-49 depend from claim 36. As such, the claims recite "said bus is routed into a first connector, into a first circuit card residing within said first connector, out of a portion of said first circuit card into a portion of a second circuit card residing within a second connector and through said second circuit card, and wherein said bus is routed from said first circuit card to said second circuit card without entering said second connector." Claims 61-64 depend from claim 51 and recite "said bus is routed into a first circuit card residing within a first slot, out of a portion of said first circuit card and into a portion of a second circuit card residing within a second slot and out of the second circuit card, wherein said bus is routed from said first circuit card to said second circuit card without entering said second slot."

As noted above, Brown fails to disclose, teach or suggest these limitations. Applicant respectfully submits that the Handbook, which merely teaches cable types, fails to teach or suggest the limitations that are missing in Brown. As such, claims 46-49 and 61-64 are allowable over the cited combination for at least the reasons set forth above and on their own merits. The rejection should be withdrawn and the claims allowed.

Claims 1 and 14 were not amended for purposes of patentability.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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